	10	11	12	13	14	15	16	17	18	19	20	21
Human	Cys	Thr	Leu	Gln	Glu	Asn	Pro	Phe	Phe	Ser	Gln	Pro
Chimpanzee	---	---	---	---	---	---	---	---	---	---	---	---
Orangutan	---	---	---	---	---	---	---	---	---	---	---	---
Gibbon	---	Gln	---	His	---	---	---	---	---	---	---	---
Baboon	---	Lys	Pro	Arg	---	---	Gln	---	---	---	Lys	---
Rhesus	---	Lys	Pro	Arg	---	---	Lys	---	---	---	Lys	---
Marmoset	---	Lys	---	Lys	---	---	Lys	Tyr	---	---	Arg	Leu
Bovine	---	Lys	---	Lys	---	---	Lys	Tyr	---	---	Lys	---
Ovine	---	Lys	---	Lys	---	---	Lys	Tyr	---	---	Lys	---
Equine	---	Lys	---	Arg	---	---	Lys	Tyr	---	Phe	Lys	Leu
Porcine	---	Lys	---	Lys	---	---	Lys	Tyr	---	---	Lys	Leu
Rabbit	---	Lys	---	Lys	---	---	Lys	Tyr	---	---	Lys	Leu
Mouse	---	Lys	---	Lys	---	---	Lys	Tyr	---	---	Lys	Leu
Rat	---	Lys	---	Lys	---	---	Lys	Tyr	---	---	Lys	Leu
Whale	---	Lys	---	Lys	Gln	---	Lys	Tyr	---	---	Lys	Leu
Quail	---	Lys	---	Gly	---	---	Arg	---	---	---	Lys	---
Chicken	---	Lys	---	Gly	---	---	Arg	---	---	---	Lys	---
Turkey	---	Lys	---	Gly	---	---	Arg	---	---	---	Lys	---
Bullfrog	---	Arg	---	Lys	---	---	Leu	Arg	---	---	Asn	Met
Salmon 1	---	Lys	---	Lys	---	---	Lys	Val	---	---	Asn	---
Salmon 2	---	---	---	Lys	Pro	---	Thr	Ile	---	Pro	Asn	---
Catfish	---	Lys	---	Lys	---	---	Asn	Ile	---	---	Lys	---
Tuna	---	---	---	Lys	Lys	---	Asn	Val	---	---	Arg	Asp
Yellowfin	---	---	---	Arg	Lys	---	Thr	Val	---	---	Arg	Asp
Bass	---	---	---	Arg	Lys	---	Ser	Val	---	---	Arg	Asp
Carp 1	---	Lys	---	Lys	---	---	Asn	Ile	---	---	Lys	---
Carp 2	---	---	---	Lys	---	---	Asn	Ile	---	---	Lys	---
Pike eel	---	Arg	---	Lys	Asp	---	Lys	---	---	---	Lys	---
Eel	---	Arg	---	---	---	---	Lys	Ile	---	---	Lys	---

FIG. 1A

	10	11	12	13	14	15	16	17	18	19	20	21
Human	Cys	Thr	Leu	Gln	Glu	Asn	Pro	Phe	Phe	Ser	Gln	Pro
Q13K	---	---	---	Lys	---	---	---	---	---	---	---	---
P16K	---	---	---	---	---	---	Lys	---	---	---	---	---
Q20K	---	---	---	---	---	---	---	---	---	---	Lys	---
P16K+Q20K	---	---	---	---	---	---	Lys	---	---	---	Lys	---
P16K+Q20K+Q13K		---	---	Lys	---	---	Lys	---	---	---	Lys	---
P16K+Q20K+Q13K+E14K			---	Lys	Lys	---	Lys	---	---	---	Lys	---

FIG. 1B

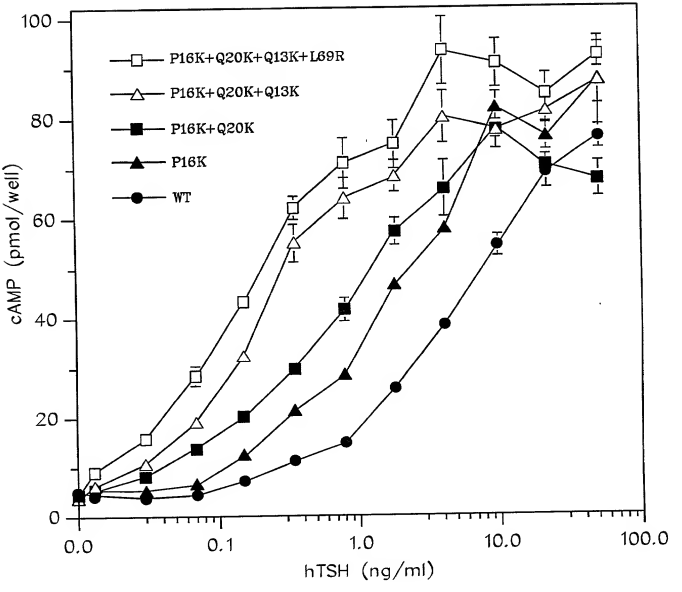

FIG. 2A

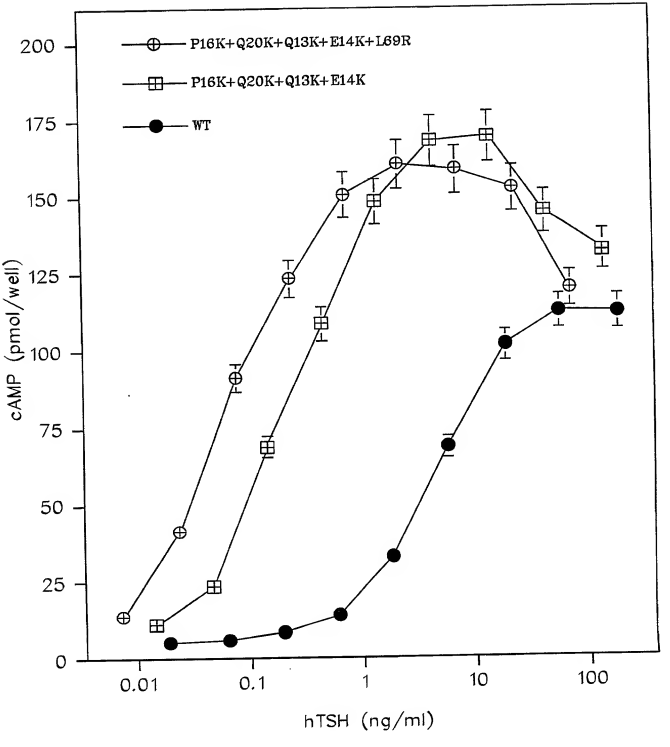

FIG. 2B

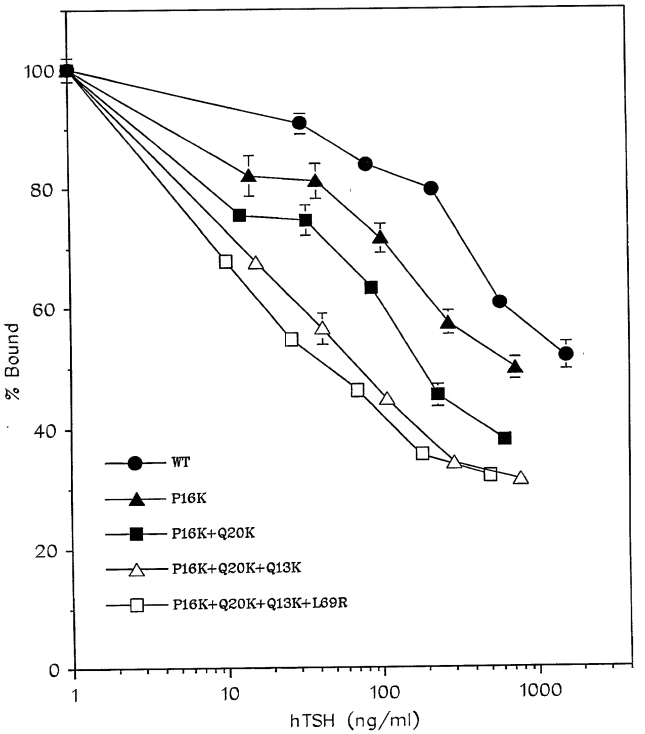

FIG. 2C

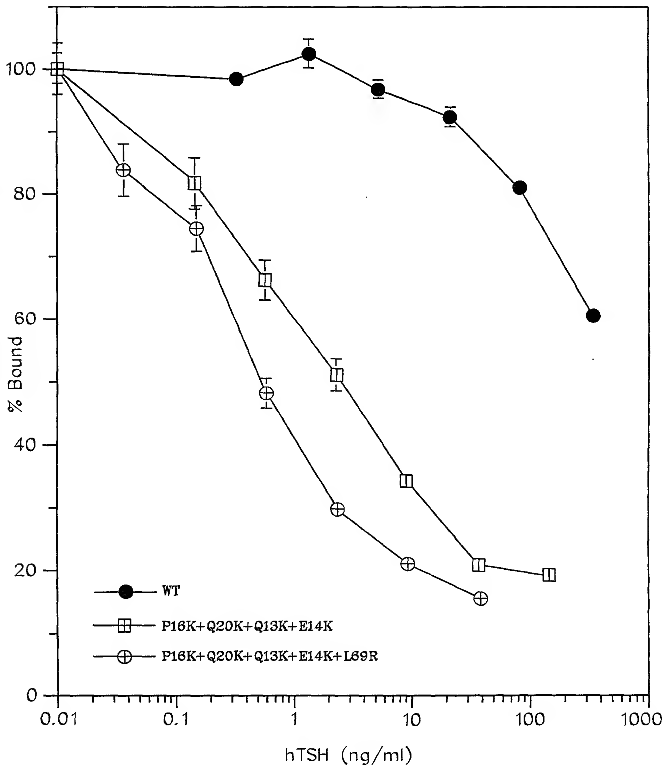

FIG. 2D

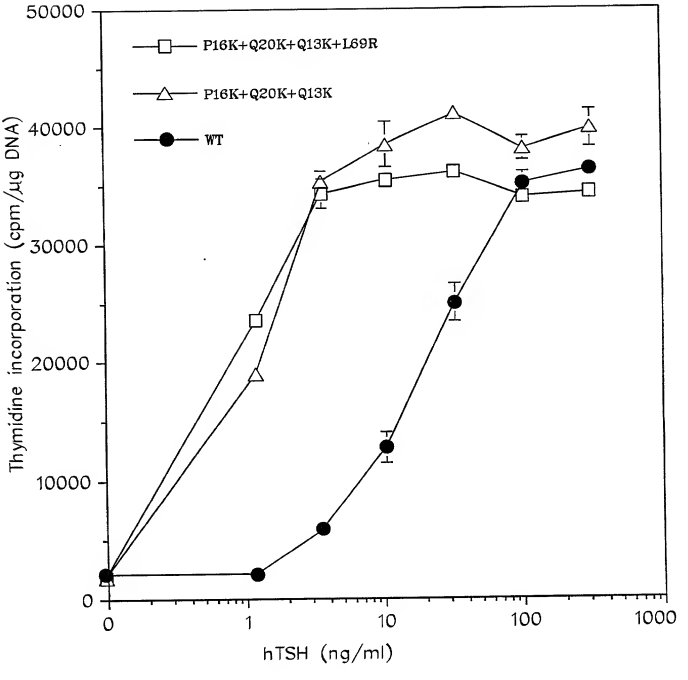

FIG. 2E

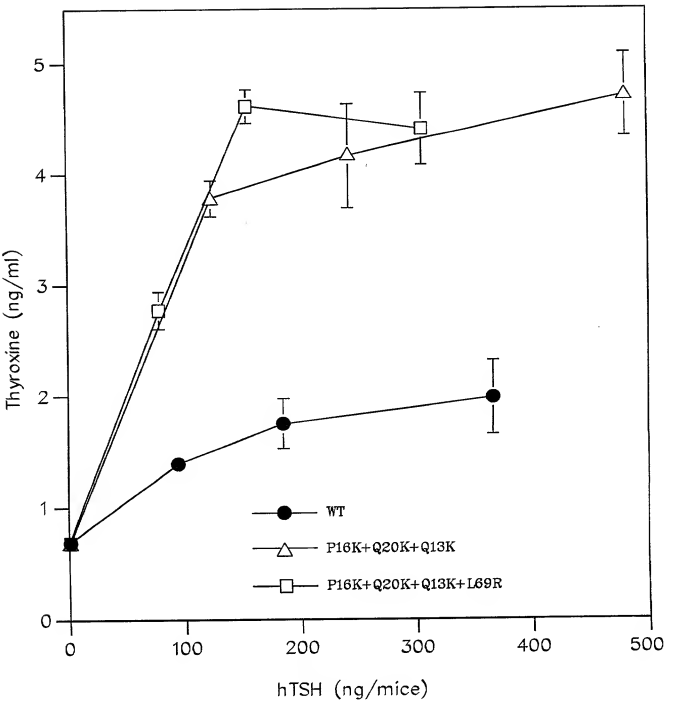
Thyroxine (ng/ml)
hTSH (ng/mice)
0
1
2
3
4
5
0
100
200
300
400
500
WT
P16K+Q20K+Q13K
P16K+Q20K+Q13K+L69R

FIG. 2F

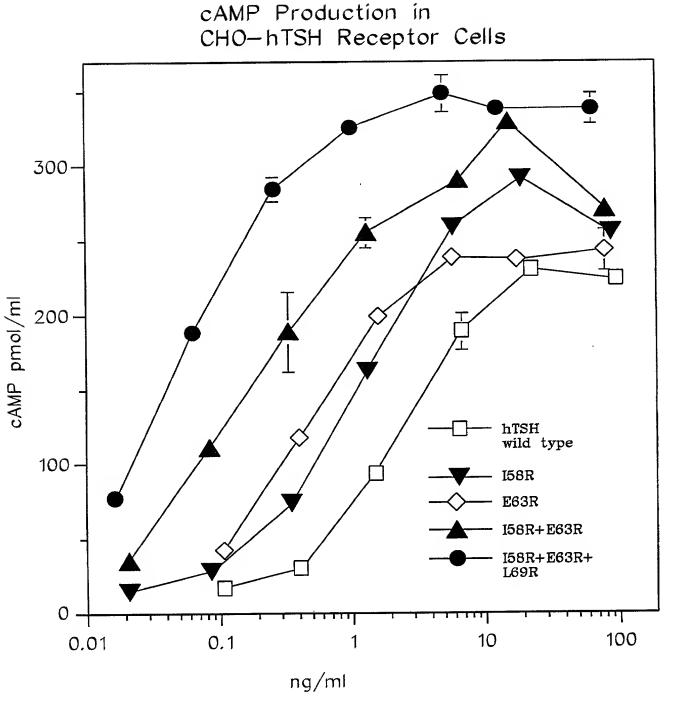

FIG. 2G

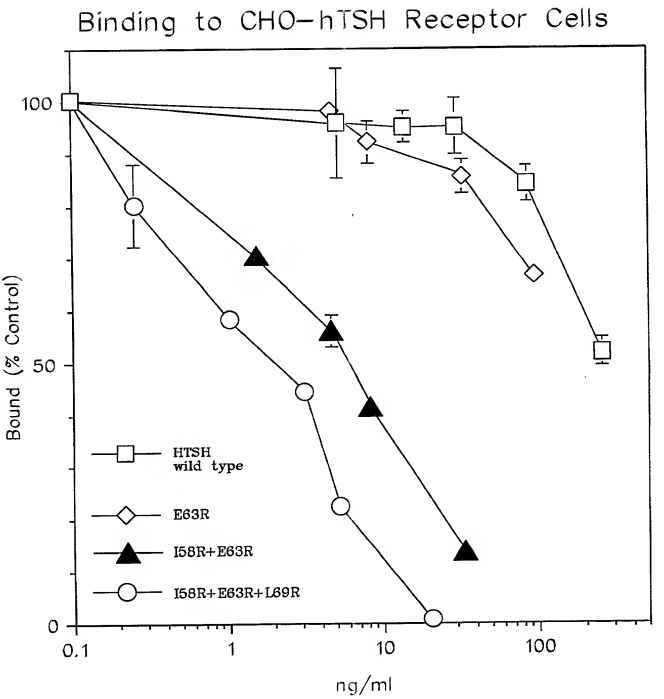

FIG. 2H

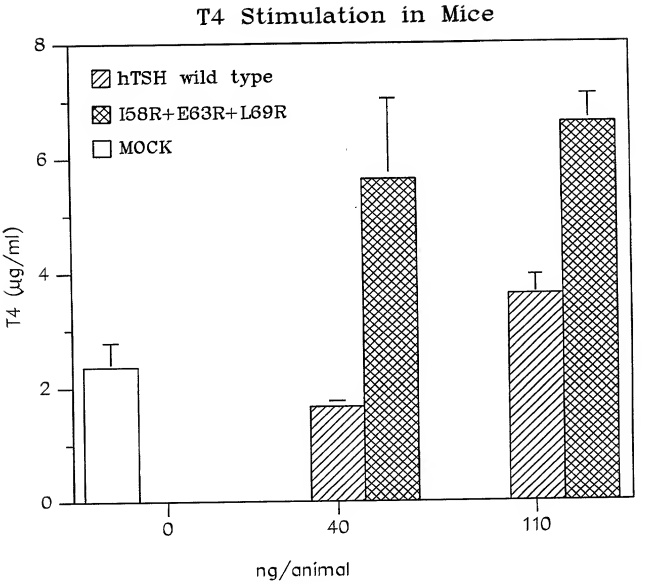

FIG. 2I

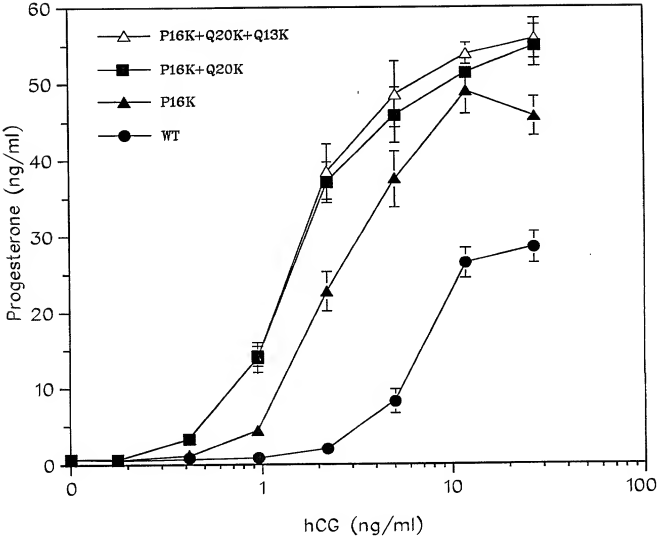

FIG. 3A

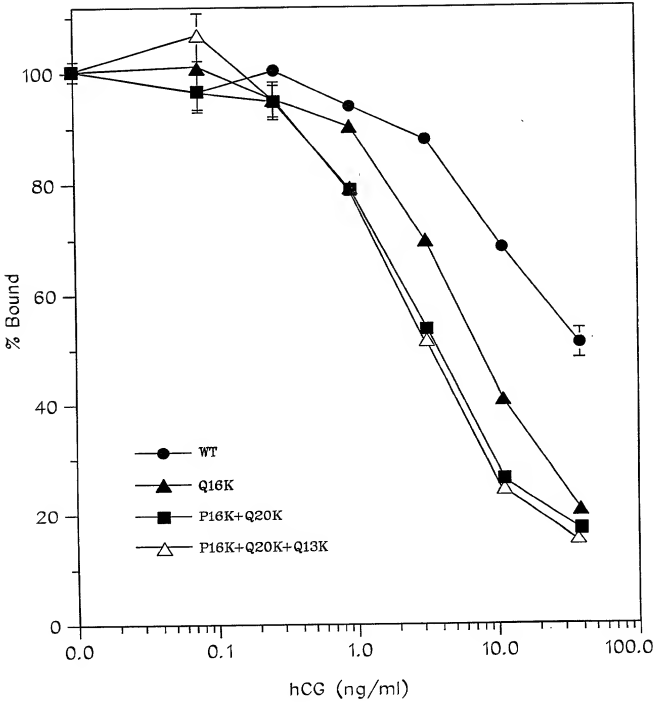

FIG. 3B

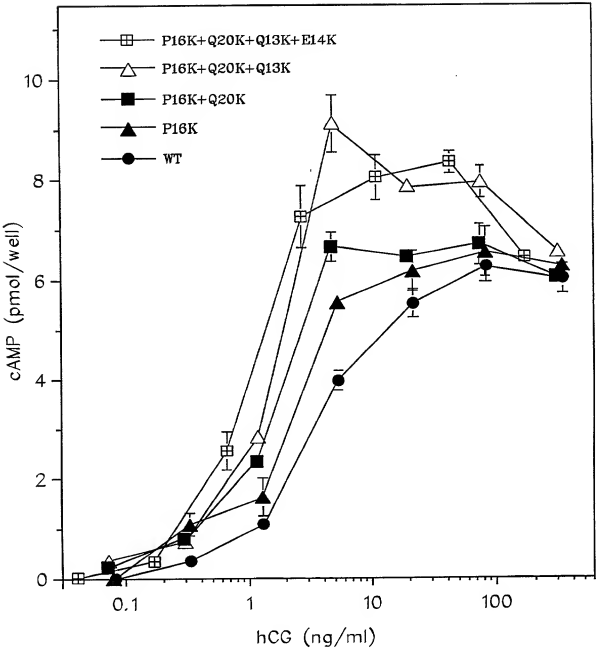

FIG. 3C

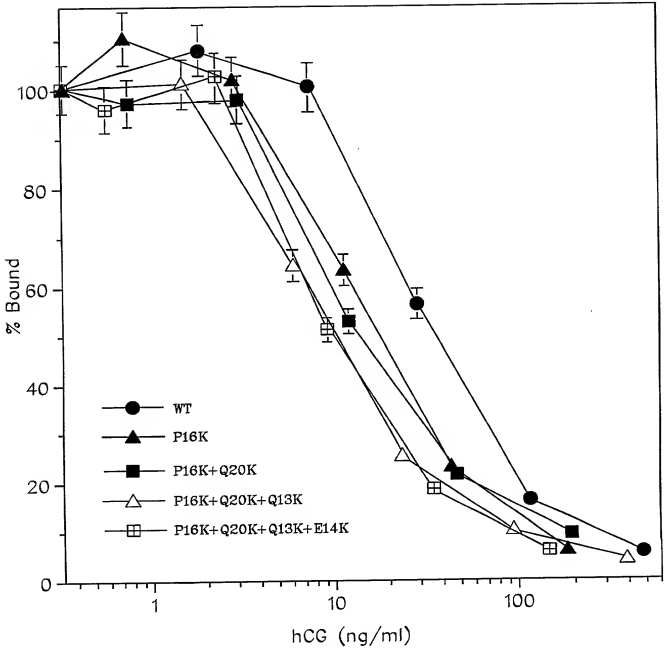

FIG. 3D